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EXAMINER

HENNING, MATTHEW T

ART UNIT	PAPER NUMBER
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2131

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/913,595

Applicant(s)

SASAMOTO ET AL.

Examiner

Matthew T. Henning

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 47 and 48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 47 and 48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1 This action is in response to the communication filed on 8/30/2006.

2 **DETAILED ACTION**

3 ***Response to Arguments***

4 Applicants' arguments filed 8/30/2006 have been fully considered but they are not
5 persuasive. Applicants' argue primarily that:

6 a. Chou's "apparatus specific" key is stored in the recording medium.

7 b. Chou's keys are noise sample and DVD specific.

8 Regarding applicants' argument a., that Chou's "apparatus specific" key is stored in the
9 recording medium, the examiner does not find the argument persuasive. As recited in the claims,
10 "the recording medium component" is the component in which the encrypted data is recorded.
11 In Chou, as seen in Fig. 2 and the last paragraph of Col. 2, there are multiple components to the
12 recording medium, including the transponder and the optical disk. In Chou, the key is stored in
13 the transponder component, which is separate from the optical disk component where the
14 encrypted data is recorded. Therefore the examiner does not find the argument persuasive.

15 Regarding applicants' argument b., that Chou's keys are noise sample and DVD specific,
16 the examiner does not find the argument persuasive. It is noted that the features upon which
17 applicant relies (i.e., the keys not being noise sample or DVD specific) are not recited in the
18 rejected claim(s). Although the claims are interpreted in light of the specification, limitations
19 from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26
20 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, there is no reason why a key cannot be both DVD
21 and transponder specific, especially since the transponder is located in the DVD. As such, the
22 examiner does not find the argument persuasive.

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1 Because the applicants' arguments have not been found persuasive, the examiner has
2 maintained the prior art rejections of the unamended claims.

3 Claims 1-18, and 47-48 have been examined and 19-46 have been cancelled.

4 All objections and rejections not set forth below have been withdrawn.

5 ***Claim Rejections - 35 USC § 112***

6
7 The following is a quotation of the second paragraph of 35 U.S.C. 112:

8 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
9 subject matter which the applicant regards as his invention.

10
11 Claims 7-18 and 47-48 are rejected under 35 U.S.C. 112, second paragraph, as being
12 indefinite for failing to particularly point out and distinctly claim the subject matter which
13 applicant regards as the invention.

14 Claim 7 recites the limitation "said recording medium component" in lines 8-9. There is
15 insufficient antecedent basis for this limitation in the claim.

16 Claims 47-48 recites the limitation "the beginning". There is insufficient antecedent
17 basis for this limitation in the claim. The examiner will assume that "the beginning" is anytime
18 prior to the beginning of encryption.

19 ***Claim Rejections - 35 USC § 103***

20 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
21 obviousness rejections set forth in this Office action:

22 *A patent may not be obtained though the invention is not identically disclosed or*
23 *described as set forth in section 102 of this title, if the differences between the subject matter*
24 *sought to be patented and the prior art are such that the subject matter as a whole would have*
25 *been obvious at the time the invention was made to a person having ordinary skill in the art to*
26 *which said subject matter pertains. Patentability shall not be negated by the manner in which*
27 *the invention was made.*

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2 Claims 1-6, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou
3 (US Patent Number 6,167,136), and further in view of Wonfor et al. (US Patent Number
4 6,381,747) hereinafter referred to as Wonfor.

5 Regarding claim 1, Chou disclosed a digital signal recorder for recording a digital signal

6 on a recording medium component (See Chou Abstract and Fig. 2), comprising: first key

7 information generation unit to generate at least one item of first key information which is

8 apparatus-specific key information (See Chou Col. 6 Lines 34-38 DKA); second key information

9 generation unit to generate at least one item of second key information (See Chou Col. 6 Lines

10 39-43 and Col. 7 Paragraph 1; i); key generation unit which receives said both of said first and

11 second key information generated by said first key information generation unit and said second

12 key information generation unit and performs a prescribed arithmetic operation thereon to

13 generate a key (See Chou Col. 6 Lines 44-58); an encryption circuit which receives said key and

14 said digital signal and encrypts said digital signal with said key (See Chou Col. 6 Lines 59-65),

15 and outputs the resulting encrypted digital signal in a case where said digital signal needs copy

16 protection (See Chou Col. 6 Lines 59-65); and a recording circuit which records, onto said

17 recording medium component, at least one of said at least one item of second key information

18 generated by said second key information generation unit, together with said encrypted digital

19 signal in a case where said digital signal needs copy protection (See Chou Col. 6 Line 66 – Col.

20 7 Line 5), and wherein said first key information as said apparatus specific key information is not

21 recorded on said recording medium component (See Chou Fig. 2, Fig. 4 and Col. 2 Last

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Paragraph), but failed to disclose recording said digital signal without encryption in a case where said digital signal needs no copy protection.

Wonfor teaches that not all data needs to be copy protected and teaches a system that turns off copy protection when it is not needed (See Wonfor Col. 2 Line 66 – Col. 3 Line 7 and Col. 12 Table 2).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Wonfor in the copy protection system of Chou by only scrambling the data that needed copy protection and not scrambling the data that didn't need copy protection. This would have been obvious because the ordinary person would have been motivated to prevent unnecessary processing to copy protect data that did not need it.

Regarding claim 2, Chou and Wonfor disclosed that said second key information generation unit generates said second key information by using a random number generator (See Chou Col. 7 Paragraph 1), and said digital signal has a packet format of a prescribed length (See Chou Col. 6 Lines 17-23).

Regarding claim 3, Chou and Wonfor disclosed that said second key information generation unit generates said second key information by using a random number generator (See Chou Col. 7 Paragraph 1), the second key information generation unit has a function for updating said at least one item of said second key information at a prescribed time interval (See Chou Col. 5 Lines 34-39, Col. 6 Lines 59-61 and 7 Lines 2-5); and said recording circuit has a function for recording information capable of identifying timing when said second key information generation unit updates said key information (See Chou Col. 5 Lines 43-48).

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1 Regarding claim 4, Chou and Wonfor disclosed that said digital signal has a packet
2 format of a prescribed length (See Chou Col. 5 Lines 34-39); and said recording circuit has a
3 function for adding identifying information capable of identifying timing where said second key
4 information generation unit updates said second key information, and where said identifying
5 information is added to packets of said digital signal and recorded on said recording medium
6 component (See Chou Col. 5 Paragraph 4 and Col. 6 Paragraph 5 and Col. 7 Paragraph 1).

7 Regarding claim 5, Chou and Wonfor disclosed that said second key information
8 generation unit generates said second key information by using a random number generator (See
9 Chou Col. 7 Paragraph 1), said encryption circuit has a function capable of selecting between a
10 first function for encrypting and outputting said digital signal, and a second function for
11 outputting said digital signal as is without encryption (See the rejection of claim 1 above); and
12 said recording circuit has a function for recording, in a prescribed area on said recording medium
13 component, encryption flag information indicating whether or not said digital signal is encrypted,
14 and, when not encrypted, not recording said second key information (See Wonfor Col. 8 Lines
15 17-23 and Table 2).

16 Regarding claim 6, Chou and Wonfor disclosed that said digital signal has a packet
17 format of a prescribed length (See Chou Col. 5 Lines 34-39); and said recording circuit has a
18 function for adding encryption flag information indicating whether or not said digital signal is
19 encrypted, to packets of said digital signal, and a function for recording on said recording
20 medium component (See Wonfor Col. 8 Lines 17-23 and Table 2).

21 Regarding claim 47, Chou and Wonfor disclosed that said first key information is pre-
22 stored in said recorder from the beginning (See Chou Fig. 8 Step 51 and Col. 6 Lines 34-38).

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1 Claims 7-12, 14-17, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable
2 over the combination of Chou and Wonfor, as applied to claim 1 above, and further in view of
3 Kim (US Patent Number 6,466,733).

4 Regarding claim 7, the combination of Chou and Wonfor disclosed a digital signal
5 recorder in which a digital signal of a packet format of a prescribed length is input comprising:
6 first key information generation unit to generate at least one item of first key information which
7 is apparatus specific key information; second key information generation unit to generate at least
8 one item of second key information; key generation unit to receive both of said first and second
9 key information generated by said first key information generation unit and said second key
10 information generation unit, and perform a prescribed arithmetic operation to generate a key; an
11 encryption circuit which receives said key and said digital signal, encrypts said digital signal
12 with said key and outputs the resulting encrypted digital signal in a case where said digital signal
13 needs copy protection; and a recording circuit which records, onto said recording medium
14 component, at least one of said at least one item of second key information generated by said
15 second key information generation unit, together with said encrypted digital signal in a case
16 where said digital signal needs copy protection, and records said digital signal without
17 encryption in a case where said digital signal needs no copy protection, and wherein said first
18 key information as said apparatus-specific key information, is not recorded on said recording
19 medium component (See rejection of claims 1-2 above), but failed to disclose dividing the signal
20 into other prescribed lengths; a synchronization signal, recording information signal, auxiliary
21 information signal, and first error correction code are added thereto to define a block format; one
22 track is formed by a prescribed number of blocks thus made; a second error correction code is

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1 added in units of n tracks (where n is an integer 1 or greater); said second error correction code is
2 also divided and said first error correction code is added thereto to constitute a block format; and
3 said tracks are recorded on said recording medium.

4 Kim teaches a method for recording a digital transport stream by creating tracks from
5 video packets and providing three error correction codes to each track (See Kim Figs. 2, 3, and 5
6 and Col. 6 Paragraphs 4-7 and Col. 7 Paragraphs 3-4).

7 It would have been obvious to the ordinary person skilled in the art at the time of
8 invention to employ the teachings of Kim in the recorder of Chou and Wonfor by storing the
9 encrypted packets in the ECC block format of Kim. This would have been obvious because the
10 ordinary person skilled in the art would have been motivated to protect the stored programs
11 against errors.

12 Regarding claim 8, see the rejection of claim 1 above wherein it would have been
13 obvious to store the frame identification number in an auxiliary storage area because the frame
14 identification number is auxiliary data.

15 Regarding claim 9, see the rejection of claim 3 above.

16 Regarding claim 10, Chou, Wonfor, and Kim disclosed that timing information was
17 included in the stored block data (see Kim Col. 5 Paragraph 6).

18 Regarding claim 11, Chou, Wonfor, and Kim disclosed that timing information was
19 stored in an auxiliary section (See Kim Col. 6 Paragraph 4 and Col. 7 Paragraph 3).

20 Regarding claim 12, Chou, Wonfor, and Kim disclosed adding timing information to the
21 blocks identifying the timing of the packets (See Kim Col. 2 Lines 54-57)

1 Regarding claim 13, Chou, Wonfor, and Kim disclosed that the frame identification
2 number was updated every frame and there was at least one frame per track (See Chou Col. 5
3 Paragraph 4). Therefore, the frame identification number was updated for every track.

4 Regarding claim 14, see the rejection of claim 7 above.

5 Regarding claim 15-17, see the rejection of claims 5-6 above.

6 Regarding claim 48, Chou, Wonfor, and Kim disclosed that said first key information is
7 pre-stored in said recorder from the beginning (See Chou Fig. 8 Step 51 and Col. 6 Lines 34-38).

8 Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination
9 of Chou, Wonfor, and Kim, as applied to claim 14 above, and further in view of Yuval et al. (US
10 Patent Number 5,586,186) hereinafter referred to as Yuval.

11 The combination of Chou, Wonfor, and Kim disclosed encrypting certain data and not
12 other data, (See the rejection of claim 1 above), but failed to disclose switching to determine
13 whether or not to encrypt every n tracks.

14 Yuval teaches that for efficiency, only every nth track should be encrypted (See Yuval
15 Col. 6 Lines 13-23).

16 It would have been obvious to the ordinary person skilled in the art at the time of
17 invention to employ the teachings of Yuval in the copy protection system of Chou, Wonfor, and
18 Kim by encrypting every nth track. This would have been obvious because the ordinary person
19 skilled in the art would have been motivated to make the copy protection system more efficient
20 in both the encryption and decryption.

21

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Conclusion

Claims 1-18, and 47-48 have been rejected.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pexravian et al. (US Patent Number 6,363,154) teaches a communication system in which a secret key and a random number are hashed to create a working key which is used to encrypt data.


Ishiguro (US Patent Number 5,796,839) teaches a system which uses a working key to encrypt data to be stored on a recording medium in such a way that without knowledge of the master key the data is not recoverable in any way other than brute force.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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1 Information regarding the status of an application may be obtained from the Patent
2 Application Information Retrieval (PAIR) system. Status information for published applications
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8 information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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